

Gas power

LNG-powered Jones Act boxships poised to set a benchmark

TOTE's order at Nassco continues a quiet revolution at the company that has been under way for a year



RAJESH JOSHI – NEW YORK

TOTE's order at Nassco in San Diego last month for a pair of liquefied natural gas-powered Jones Act containerships of 3,100 teu each for the Puerto Rico trade has been labelled a "major technological milestone in international shipping".

The two dual-fuel vessels, to be delivered in 2015 and 2016, are expected to become the biggest ships of any type anywhere in the world that are primarily propelled by LNG. Maritime consultant and blogger Tim Colton has suggested that this is the "most stunning maritime news of this decade".

However, the Nassco order is merely the continuation of a quiet LNG revolution under way for the past year at Tote.

The order came four months after the company decided to retrofit its

nine-year-old Orca-class containership pair *Midnight Sun* and *North Star* to dual-engine LNG capability. The two ships, also built by Nassco, are currently deployed in the Alaskan trade between Tacoma and Anchorage.

The Princeton, New Jersey-headquartered TOTE, a subsidiary of Seattle-based Saltchuck Resources, has three divisions: TOTE Maritime, TOTE Logistics and TOTE Services.

TOTE Maritime has two subdivisions, Totem Ocean Trailer Express and Sea Star Line, which respectively specialise in Jones Act liner shipping involving Alaska and Puerto Rico.

Totem Ocean Trailer Express operates the Orca-class pair. Sea Star is expected to operate the 3,100 teu Nassco newbuilding ships when they enter trade.

TOTE, which has signed the actual order through a shipholding subsidiary, has said the entire Nassco newbuilding project entailed a capital investment of \$350m, including the sticker price of the two ships, shoreside terminal improvements and other financial items.

Chief executive Anthony Chiarello refused to divulge the individual sticker price of each Nassco ship, which is being built to a Daewoo Shipbuilding & Marine Engineering design with a MAN ME-GI dual-fuel slow-speed engine.



The order for two dual-fuel containerships has been hailed as a "major technological milestone in international shipping".

However, he said each ship was costing TOTE 10%-15% more than a standard-model Jones Act containership of 3,100 teu built at a US shipyard.

The 3,100 teu pair would replace Sea Star's existing steamships in the Jacksonville to Puerto Rico lane, the 1974-built *El Morro* and 1976-built *El Yunque*, each of 1,200 teu.

A third Sea Star steamship, the 1974-built *El Faro*, is currently in lay-up. Totem Ocean Trailer Express' 1975-built *Great Land* is also laid up. *El*

Morro, *El Yunque*, *El Faro* and *Great Land* would be honourably retired ahead of their becoming obsolete in 2019 because of the North American emission control area.

Mr Chiarello said the arrival of the ECA this year and the need to eventually replace ships made the decision to opt for LNG almost an automatic choice at both Totem Ocean Trailer Express and Sea Star.

"The entire voyage from the Pacific Northwest to Alaska falls within the ECA, and one third of the Florida-

Puerto Rico journey also is in the ECA, so we have to factor in the cost of low-sulphur fuel regardless of whether we have LNG engines," Mr Chiarello said.

He said TOTE intended to use LNG as the primary fuel at all times, with diesel serving merely as back-up.

Meanwhile, preparation work on the conversion of *Midnight Sun* and *North Star* is already under way. Totem Ocean Trailer Express does not plan to withdraw this pair from service during the retrofit. Most of the conversion work will be done during routine voyages, and the final work completed during normal drydockings.

The renovated diesel-LNG *Midnight Sun* and *North Star* are expected to start trading by 2015. Therefore, the bigger story here is that within four years, TOTE's entire Jones Act liner business spanning Alaska and Puerto Rico would be completely serviced by LNG-powered ships.

Since the Alaska ships are hardly a decade old right now, TOTE after 2015 would also boast the youngest Jones Act liner fleet in the industry.

Mr Colton wrote in his blog that that was excellent news "for the Puerto Rican trade in particular, which is where the oldest and most embarrassing Jones Act ships now operate". ■

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TOTE has also decided to retrofit two containerships, including *Midnight Sun*, with dual-engine LNG capability.

TOTE order reflects confidence over Puerto Rico

ANTHONY Chiarello, chief executive of TOTE, states that the group's \$350m investment in the Nassco newbuilding project is based on its confidence in the Puerto Rico trade for decades to come, writes Rajesh Joshi.

Although Mr Chiarello admitted that the ship operation economics of the liquefied natural gas-powered ships remain unknown, he sees these as short-term factors. In the long run, TOTE is confident that its bet would pay off, from a commercial as well as an environmental perspective.

There is reason for caution in the immediate context. In the same week when TOTE unveiled its Nassco order, its trade rival in the Puerto Rico lane, Horizon Lines, said it was reducing the frequency of its service from Jacksonville to San Juan from twice a week to once a week.

Horizon said this step would "better align its deployed capacity with market demand and improve cargo availability times in San Juan".

Horizon also laid up the 1968-



Chiarello: confident that the order will pay off from a commercial as well as environmental perspective.

built, 1,380 teu *Horizon Discovery* because of this decision.

Projections are for demand to grow by 2016 and there are no grounds to sound an immediate alarm on TOTE's Nassco order.

However, the price of LNG at that time would be another factor determining whether an expensive LNG-powered newbuilding could effectively compete with older, conventional steam-powered rivals.

Horizon, for its part, has highlighted the \$30m upgrades it has put into the three remaining ships that still serve Puerto Rico, *Horizon Navigator*, *Horizon Trader* and *Horizon Producer*.

Mr Chiarello agreed that these economic and competitive factors suggest a "volatile" market, but outlined several reasons why he thought TOTE's decision to invest in LNG-powered ships would pay off.

Obsolescence is one reason. Regardless of the North American emission control area, Mr Chiarello expects that most Jones Act containerships would have to be replaced eventually.

Meanwhile, environmental regulations and obligations are expected to become more stringent. In this scenario, the Nassco order "suggests a much lesser significant impact and is a very deliberate decision as it relates to the groundbreaking use of LNG as the primary fuel for these vessels", said Mr Chiarello.

Size is another reason. The Sea

Star ships that the two Nassco newbuildings would replace have a capacity of 1,200 teu each, compared with 3,100 teu each for the Nassco pair.

According to TOTE, the Nassco newbuildings would accommodate five times more 53 ft containers than current ships in Puerto Rico. They would be more versatile, allowing for the transport of everything from cars to corn syrup.

The ships also will feature expanded volumes for refrigeration equipment. This could open up potentially lucrative new markets in transporting pharmaceuticals, produce and other perishable or time-sensitive cargoes to Puerto Rico.

There has been great market curiosity since TOTE ordered the Nassco pair about where the company plans to refuel these ships. In certain quarters, LNG refuelling is seen as the hidden pitfall that over-eager owners ignore while placing such orders.

Mr Chiarello said this is the "next big issue" that TOTE is studying, and

assured Lloyd's List that the matter is well in hand and the company expects to have a viable refuelling system in place well before the ships' delivery, in both the Alaska and Puerto Rico trades.

He said each Nassco newbuilding could carry enough LNG for two and a half round-trip voyages between Jacksonville and Puerto Rico. Each ship also has enough diesel to sail up to 9,000 miles.

TOTE has yet to figure out where its Puerto Rico ships might refuel. Mr Chiarello said bunkering barges were under consideration as one of the options.

However, the government of Puerto Rico has been on an enthusiastic push to develop LNG and LNG refuelling capacity in the territory. The final decision could well be to refuel the Nassco newbuilding pair in Puerto Rico, Mr Chiarello hinted.

Refuelling the Alaska LNG ships in Washington State also should not be a problem, he said. ■

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